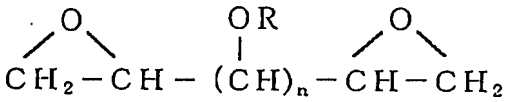
IN THE CLAIMS:

1. (Currently amended) A hyperbranched polymer <u>of</u> ~~comprising~~ at least one anhydrosugar-related compound selected from a dianhydrosugar alcohol represented by the following general formula [1]:

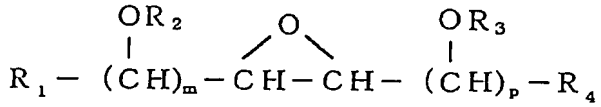


(1)

(wherein R is hydrogen atom or a hydrocarbon group having from 1 to 30 carbon atoms, provided that nR's are equal to or different from one another and at least one R of nR's is hydrogen atom, and

symbol n is an integer from 1 to 10)

and an anhydrosugar alcohol represented by the following general formula [2]:



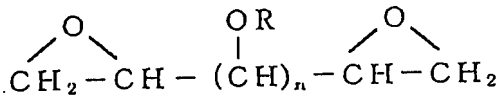
(2)

(wherein R_1 is hydrogen atom or a hydrocarbon group having from 1 to 30 carbon atoms; R_2 is hydrogen atom or a hydrocarbon group having from 1 to 30 carbon atoms; R_3 is hydrogen atom or a hydrocarbon group having from 1 to 30 carbon atoms; and R_4 is hydrogen atom or a hydrocarbon group having from 1 to 30 carbon atoms; provided that R_1, mR_2's, pR_3's and R_4 are equal to or different from one another and at least one of R_2 or R_3 of said mR_2's and pR_3's is hydrogen atom, respectively; and

symbol m is zero (0) or an integer from 1 to 20 and symbol p is an integer from 1 to 20, provided that symbol m + p is an integer from 1 to 20).

2. (Currently amended) A hyperbranched <u>copolymer of</u> ~~polymer comprising:~~

I. at least one anhydrosugar-related compound selected from a dianhydrosugar alcohol represented by the following general formula [1]:

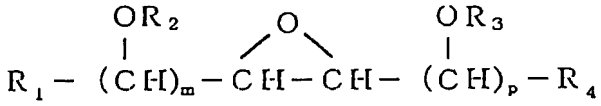


(1)

(wherein R is hydrogen atom or a hydrocarbon group having from 1 to 30 carbon atoms, provided that nR's are equal to or different from one another and at least one R of nR's is hydrogen atom, and

symbol n is an integer from 1 to 10)

and an anhydrosugar alcohol represented by the following general formula [2]:



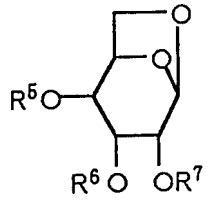
(2)

(wherein R_1 is hydrogen atom or a hydrocarbon group having from 1 to 30 carbon atoms; R_2 is hydrogen atom or a hydrocarbon group having from 1 to 30 carbon atoms; R_3 is hydrogen atom or a hydrocarbon group having from 1 to 30 carbon atoms; and R_4 is hydrogen atom or a hydrocarbon group having from 1 to 30 carbon atoms; provided that R_1, mR_2's, pR_3's and R_4 are equal to or different from one another and at least one of R_2 or R_3 of said mR_2's and pR_3's is hydrogen atom, respectively; and

symbol m is zero (0) or an integer from 1 to 20 and symbol p is an integer from 1 to 20, provided that symbol m + p is an integer from 1 to 20); and

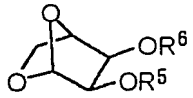
II. at least one sugar compound selected from ~~an anhydrosugar~~ the group consisting of:

anhydrosugars ~~as~~ represented by the following general formula [3] :



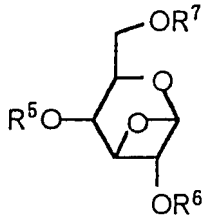
(3)

anhydrosugars represented by the following general formula [4]:



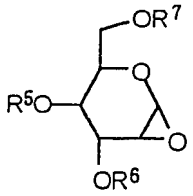
(4)

anhydrosugars represented by the following general formula [5]:



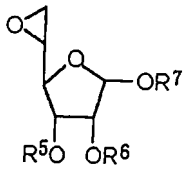
(5)

anhydrosugars represented by the following general formula [6]:



(6)

and anhydrosugars represented by the following general formula [7]:



(7)

(wherein R^5 is hydrogen atom of a hydrocarbon group having from 1 to 30 carbon atoms; R^6 is hydrogen atom or a hydrogen group having from 1 to 30 carbon atoms; and R^7 is hydrogen atom or a hydrocarbon group having 1 to 30 carbon atoms; provided that R^5,

R^6 and R^7 are equal to or different from one another).

3. (Previously presented) The hyperbranched polymer as claimed in claim 1 wherein said hydrocarbon group is an alkyl group having from 1 to 30 carbon atoms, an aryl group having from 6 to 30 carbon atoms or an arylalkyl group having from 7 to 30 carbon atoms.

4. (Previously presented) The hyperbranched polymer as claimed in claim 1 wherein said hydrocarbon group is an alkyl group having from 1 to 4 carbon atoms, an aryl group having from 6 to 12 carbon atoms or an arylalkyl group having from 7 to 10 carbon atoms.

5. (Currently amended) The hyperbranched polymer as claimed in claim 1 comprising at least one ~~wherein said~~ dianhydrosugar alcohol selected from the group consisting of ~~[1] is a~~ 1,2;5,6-dianhydro-D-mannitol ~~1,2:5,6-dianhydro-D-mannitol-type compound~~, 1,2:5,6-dianhydro-L-iditol ~~a 1,2:5,6-dianhydro-L-iditol-type compound~~ , 1,2-anhydro-annitol ~~a 1,2-anhydro-annitol-type compound~~ , 1,2:5,6-dianhydro-galactitol ~~1,2:5,6-dianhydro-galactitol-type compound~~ , 1,2:5,6-dianhydro-glucitol ~~a 1,2:5,6-dianhydro-glucitol-type compound~~ and 1,2:5,6-dianhydro-xylitol ~~or a 1,2:5,6-dianhydro-xylitol-type compound~~ .

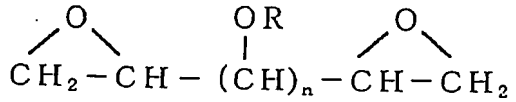
6. (Currently amended) The hyperbranched polymer as claimed in claim 1 comprising at least one ~~wherein said~~ anhydrosugar alcohol selected from the group consisting of ~~[1] is a~~ 1,2-anhydro-D-mannitol ~~1,2-anhydro-D-mannitol-type compound~~, 1,2-anhydro-L-iditol ~~a 1,2-anhydro-L-iditol-type compound~~ , 1,2-anhydro-annitol ~~a 1,2-anhydro-~~

~~annitol-type compound~~ , 1,2-anhydro-galactitol ~~1,2-anhydro-galactitol-type compound~~ , 1,2-anhydro-glucitol ~~a 1,2-anhydro-glucitol-type compound~~ , 1,2-anhydro-xylitol ~~1,2-anhydro-xylitol-type compound~~ and 1,2-anhydro-threitol ~~or a 1,2-anhydro-threitol-type compound~~ .

7. (Previously presented) The hyperbranched polymer as claimed in claim 1 wherein a degree of branching is from 0.05 to 1.00.

8. (Previously presented) The hyperbranched polymer as claimed in claim 1 wherein a degree of branching is from 0.45 to 1.00.

9. (Original) A process for the preparation of a hyperbranched polymer comprising polymerizing at least one anhydrosugar-related compound selected from a dianhydrosugar alcohol represented by the following general formula [1]:

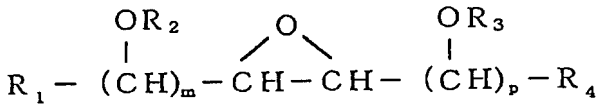


(1)

(wherein R is hydrogen atom or a hydrocarbon group having from 1 to 30 carbon atoms, provided that nR's are equal to or different from one another and at least one R of nr's is hydrogen atom, and

symbol n is an integer from 1 to 10)

and an anhydrosugar alcohol represented by the following general formula [2]:



(2)

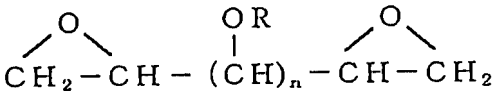
(wherein R_1 is hydrogen atom or a hydrocarbon group having from 1 to 30 carbon atoms; R_2 is hydrogen atom or a hydrocarbon group having from 1 to 30 carbon atoms; R_3 is hydrogen atom or a hydrocarbon group having from 1 to 30 carbon atoms; and R_4 is hydrogen atom or a hydrocarbon group having from 1 to 30 carbon atoms; provided that R_1, mR_2's, pR_3's and R_4 are equal to or different from one another and at least one of R_2 or R_3 of said mR_2's and pR_3's is hydrogen atom, respectively; and

symbol m is zero (0) or an integer from 1 to 20 and symbol p is an integer from 1 to 20, provided that symbol m + p is an integer from 1 to 20)

in the presence of a cationic initiator or anionic initiator.

10. (Currently amended) A process for the preparation of a hyperbranched copolymer ~~polymer~~ comprising copolymerizing: ~~polymerizing~~

I. at least one anhydrosugar-related compound selected from a dianhydrosugar alcohol represented by the following general formula [1]:

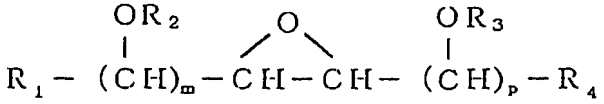


(1)

(wherein R is hydrogen atom or a hydrocarbon group having from 1 to 30 carbon atoms, provided that nR's are equal to or different from one another and at least one R of nr's is hydrogen atom, and

symbol n is an integer from 1 to 10)

and an anhydrosugar alcohol represented by the following general formula [2]:



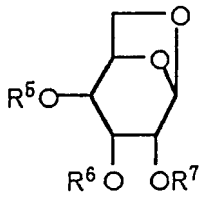
(2)

(wherein R_1 is hydrogen atom or a hydrocarbon group having from 1 to 30 carbon atoms; R_2 is hydrogen atom or a hydrocarbon group having from 1 to 30 carbon atoms; R_3 is hydrogen atom or a hydrocarbon group having from 1 to 30 carbon atoms; and R_4 is hydrogen atom or a hydrocarbon group having from 1 to 30 carbon atoms; provided that R_1, mR_2's, pR_3's and R_4 are equal to or different from one another and at least one of R_2 or R_3 of said mR_2's and pR_3's is hydrogen atom, respectively; and

symbol m is zero (0) or an integer from 1 to 20 and symbol p is an integer from 1 to 20, provided that symbol m + p is an integer from 1 to 20); and

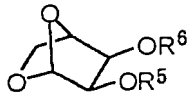
II. at least one sugar compound selected from ~~an anhydrosugar~~ the group consisting of:

anhydrosugars ~~as~~ represented by the following general formula [3] :



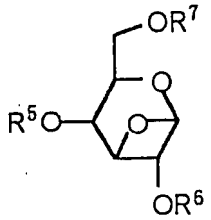
(3)

anhydrosugars represented by the following general formula [4]:



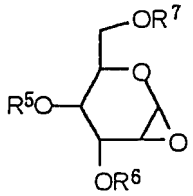
(4)

anhydrosugars represented by the following general formula [5]:



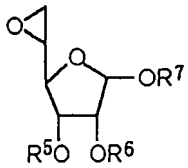
(5)

anhydrosugars represented by the following general formula [6]:



(6)

and anhydrosugars represented by the following general formula [7]:



(7)

(wherein R^5 is hydrogen atom of a hydrocarbon group having from 1 to 30 carbon atoms; R^6 is hydrogen atom or a hydrogen group having from 1 to 30 carbon atoms; and R^7 is hydrogen atom or a hydrocarbon group having 1 to 30 carbon atoms; provided that R^5, R^6 and R^7 are equal to or different from one another),

in the presence of a cationic initiator or an anionic initiator.

11. (Previously presented) The method for the preparation of the hyperbranched polymer as claimed in claim 9 wherein said hydrocarbon group is an alkyl group having from 1 to 4 carbon atoms, an aryl group having from 6 to 12 carbon atoms or an arylalkyl group having from 7 to 10 carbon atoms.

12. (Currently amended) The method for the preparation of the hyperbranched polymer as claimed in claim 9 comprising at least one ~~wherein said~~ dianhydrosugar alcohol selected from the group consisting of ~~[1] is a~~ 1,2;5,6-dianhydro-D-mannitol ~~1,2:5,6-dianhydro-D-mannitol-type compound~~, 1,2:5,6-dianhydro-L-iditol ~~a 1,2:5,6-dianhydro-L-iditol-type compound~~, 1,2-anhydro-annitol ~~a 1,2-anhydro-annitol-type compound~~, 1,2:5,6-dianhydro-galactitol ~~1,2:5,6-dianhydro-galactitol-type compound~~, 1,2:5,6-dianhydro-glucitol ~~a 1,2:5,6-dianhydro-glucitol-type compound~~ and 1,2:5,6-dianhydro-xylitol ~~or a 1,2:5,6-dianhydro-xylitol-type compound~~.

13. (Currently amended) The method for the preparation of a hyperbranched polymer as claimed in claim 9 comprising at least one ~~wherein said~~ anhydrosugar alcohol selected from the group consisting of ~~[1] is a~~ 1,2-anhydro-D-mannitol ~~1,2-anhydro-D-mannitol-type compound~~, 1,2-anhydro-L-iditol ~~a 1,2-anhydro-L-iditol-type compound~~, 1,2-anhydro-annitol ~~a 1,2-anhydro-annitol-type compound~~, 1,2-anhydro-galactitol ~~1,2-anhydro-galactitol-type compound~~, 1,2-anhydro-glucitol ~~a 1,2-anhydro-glucitol-type compound~~ 1,2-anhydro-xylitol ~~1,2-anhydro-xylitol-type compound~~ and 1,2-anhydro-threitol ~~or a 1,2-anhydro-threitol-type compound~~.

14. (Previously presented) The method for the preparation of the hyperbranched polymer as claimed in claim 9 wherein said cationic initiator is a thermal cationic initiator, a photo cationic initiator, a Lewis acid or a Brenstead's acid.

15. (Previously presented) The method for the preparation of the hyperbranched

polymer as claimed in claim 9, wherein said cationic initiator is sulphonium antimonate, boron trifluoride diethyl etherate, tin tetrachloride, antimony pentachloride, phosphorus pentachloride or trifluoromethane sulfonic acid.

16. (Previously presented) The method for the preparation of the hyperbranched polymer as claimed in claim 9, wherein said anionic initiator is a hydroxide or a metal alcolate.

17. (Previously presented) The method for the preparation of the hyperbranched polymer as claimed in claim 9, wherein said anionic initiator is KOH, tert-BuOK or $Zn(OCH_3)_2$.

18. (Previously presented) The method for the preparation of the hyperbranched polymer as claimed in claim 9, wherein said cationic initiator or said anionic initiator is ~~used at the rate of~~ 1-10% by weight of the ~~starting~~ anhydrosugar-related compound.

19. (Previously presented) The method for the preparation of the hyperbranched polymer as claimed in claim 9, wherein a degree of branching is from 0.05 to 1.00.

20. (Previously presented) The method for the preparation of the hyperbranched polymer as claimed in claim 9, wherein a degree of branching is from 0.45 to 1.00.

21. (New) The method for the preparation of the hyperbranched polymer as claimed in claim 10 wherein said cationic initiator is a thermal cationic initiator, a photo cationic

initiator, a Lewis acid or a Brenstead's acid.

22. (New) The method for the preparation of the hyperbranched polymer as claimed in claim 10, wherein said cationic initiator is sulphonium antimonate, boron trifluoride diethyl etherate, tin tetrachloride, antimony pentachloride, phosphorus pentachloride or trifluoromethane sulfonic acid.

23. (New)The method for the preparation of the hyperbranched polymer as claimed in claim 10, wherein said anionic initiator is a hydroxide or a metal alcolate.

24. (New) The method for the preparation of the hyperbranched polymer as claimed in claim 10, wherein said anionic initiator is KOH, tert-BuOK or $Zn(OCH_3)_2$.

25. (New) The method for the preparation of the hyperbranched polymer as claimed in claim 10, wherein said cationic initiator or said anionic initiator is 1-10% by weight of the anhydrosugar-related compound.

26. (New) The hyperbranched polymer as claimed in claim 2 wherein said hydrocarbon group is an alkyl group having from 1 to 30 carbon atoms, an aryl group having from 6 to 30 carbon atoms or an arylalkyl group having from 7 to 30 carbon atoms.

27. (New) The hyperbranched polymer as claimed in claim 2 wherein said hydrocarbon group is an alkyl group having from 1 to 4 carbon atoms, an aryl group having

from 6 to 12 carbon atoms or an arylalkyl group having from 7 to 10 carbon atoms.

28. (New) The hyperbranched polymer as claimed in claim 2 comprising at least one dianhydrosugar alcohol selected from the group consisting of 1,2;5,6-dianhydro-D-mannitol, 1,2:5,6-dianhydro-L-iditol , 1,2-anhydro-annitol , 1,2:5,6-dianhydro-galactitol , 1,2:5,6-dianhydro-glucitol and 1,2:5,6-dianhydro-xylitol .

29. (New) The hyperbranched polymer as claimed in claim 2 comprising at least one anhydrosugar alcohol selected from the group consisting of 1,2-anhydro-D-mannitol , 1,2-anhydro-L-iditol , 1,2-anhydro-annitol , 1,2-anhydro-galactitol , 1,2-anhydro-glucitol , 1,2-anhydro-xylitol and 1,2-anhydro-threitol .

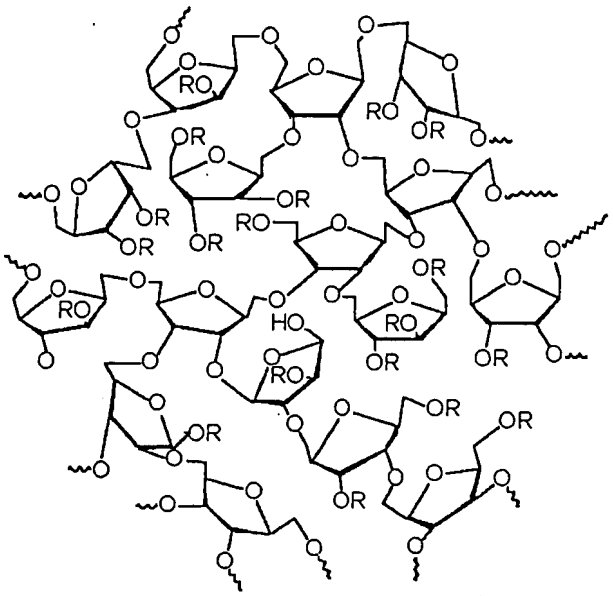
30. (New) The hyperbranched polymer as claimed in claim 2 wherein a degree of branching is from 0.05 to 1.00.

31. (New) The hyperbranched polymer as claimed in claim 2 wherein a degree of branching is from 0.45 to 1.00.

32. (New) The hyperbranched polymer as claimed in claim 1 having a molecular weight of at least 10,000 when measured by the static light scattering method.

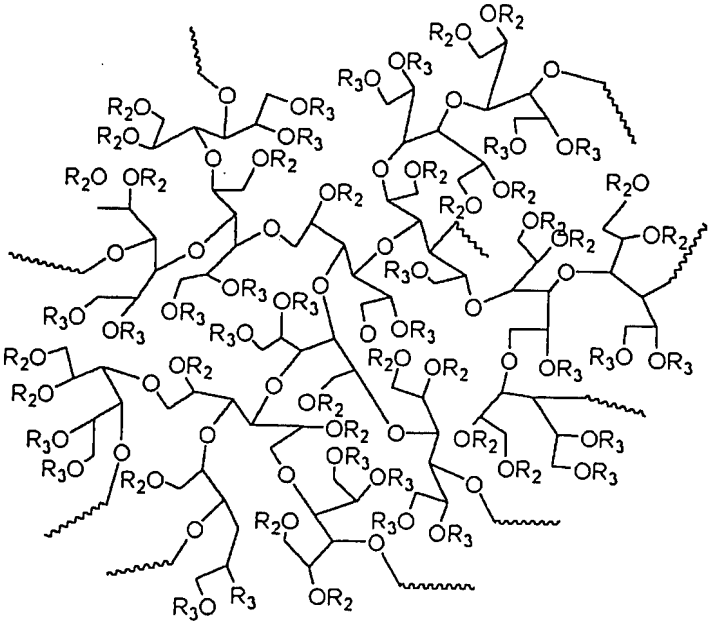
33. (New) The hyperbranched polymer as claimed in claim 1 having a molecular weight of at least 200,000 when measured by the static light scattering method.

34. (New) The hyperbranched polymer as claimed in claim 1 having the structure:



(a)

35. (New) The hyperbranched polymer as claimed in claim 1 having the structure:



(b)